PACIFIC COAST ENTOMOLOGICAL SOCIETY

PROCEEDINGS

THREE HUNDRED AND SIXTY-THIRD MEETING

The 363rd meeting was held Friday, 21 February 1975, in the Morrison Auditorium of the California Academy of Sciences, Golden Gate Park, San Francisco, President Daly presiding, with 40 members and 24 visitors present.

The following persons were elected to membership. Student membership: Patricia Bushnell, Albert Green, Rhonda D. Oliver, Norman J. Smith, Gordon Sweeny, Charles H. Dill. Regular membership: Steven Anderson, Dr. Janice Gillespie, Scott McCleve, John W. Armstrong.

The following notes were presented:

The Activity of Several Geometridae in the San Francisco Bay Area in January (Lepidoptera).—January of 1975 in the Bay Area was mostly sunny with relatively warm mid-day temperatures. Adult flights of some diurnal Geometridae occurred before heavy winter storms commenced the last few days, and extended through most of February. Three univoltine species are of note.

Brephos infans oregonesis Swett was flying in Stonybrook Canyon (Palomeres Rd., n. of Niles Canyon), Alameda County, California on January 24, 1975. I first found this moth here on February 19, 1967, and all four stages were collected, the dates were mid to late February. The adults were attracted to willow catkins on the February dates, but in January of this year the trees were bare, with no apparent nectar source.

Hydriomena nubilofasciata Packard was collected in Alum Rock Park, Santa Clara County, California, on January 18, and was in good numbers in Stonybrook Canyon on January 24, 1975. Though not strictly diurnal (it freely comes to light), this widespread species (with several named forms), often flies in the daytime. It can become rather common in moist, shady canyons in February and early March.

Epirrhoe plebeculata Guenée was extremely abundant at Alum Rock Park on January 18, and was already showing signs of wear by January 24 at Stonybrook Canyon. This diurnal species usually has its peak flight in February or March in northern California. I had observed this moth on December 27, 1972, in the Santa Barbara area, and there is no doubt other "winter" records exist for it in southern California. January records for previous seasons include other geometrids (mostly *Hydriomena* spp.), noctuids, plus the Lycaenids *Plebejus acmon "cottlei"* (Grinnell) and *Philotes sonorensis* (Felder and Felder).—ROBERT L. LANGSTON, *Kensington, California.*

The Range Extension of the Fruit Pest *Stelidota geminata* (Say) in California (Coleoptera: Nitidulidae).—Both male and female specimens of *Stelidota geminata* (Say) were collected by John W. Armstrong and Edwin L. Soderstrom from samples of decaying oranges and fig bait traps in Fresno and Madera Counties, California. Larvae of *S. geminata* were found in decaying oranges. These specimens were collected from March through September, 1974.

S. geminata is known to occur from Massachusetts (Tyngsboro, Springfield) to

Florida (Capron, Haulover, Edgewater, Miami, Paradise Key), west to Iowa (Mt. Pleasant), Missouri (St. Louis) and Texas (Columbus), south through Central America to Colombia and Brazil. In the western United States, *S. geminata* was previously known to occur only in southern California (San Diego to Los Angeles), south of the Tehachapi Mountains.—JOHN W. ARMSTRONG, *Fresno, California.*

The Effects of Gregarines on the Metabolic Rate of *Tenebrio molitor* Larvae (Coleoptera: Tenebrionidae).—Most populations of *Tenebrio molitor* harbor large numbers of gregarine protozoans in the alimentary canal. Larvae may contain up to 6,000 gregarines completely blocking the alimentary canal. The respiration rate of infected and uninfected larvae were compared by use of a modified Wenneshind-Scholander single stage respirometer. Each larva was placed in a separate respirometer and readings were taken for a period of four hours, allowing half an hour for the larvae to adjust. Two trials were run, each consisting of 24 infected and uninfected larvae. The trials were performed at night between the hours of 9 p.m. and 2 a.m. The temperature ranged from 22.5 to 24.0 degrees centigrade. Upon the elapse of the four hours, the larvae were removed from the respirometers, weighed, mildly anesthetized with a few drops of 70% alcohol on the integument, and dissected. The alimentary canal was removed and teased to certify that infection or uninfection of the larvae. The results showed that there is a highly significant difference in the metabolic rate of the infected and uninfected larvae ($P \leq 0.01$), with the infected larvae respiring at a much higher rate.

To establish whether there is a correlation between the number of gregarines present and the metabolic rate of the larvae, the respiration rate of twenty infected larvae was studied. The concentration of gregarines was recorded as number of gregarines per larva. Regression analysis showed that there is a definite positive correlation between the number of gregarines and the larval metabolic rate ($P \leq 0.01$). The mean metabolic rate of uninfected larvae was determined to be 0.9275 ml 0_2/g. wet wt./hr., whereas the mean metabolic rate of infected larvae was 1.2173 ml 0_2/g. wet wt./hr. The increase in metabolic rate was calculated to be 0.00554 ml 0_2/g. wet wt./hr./gregarine.—GEORGE N. ZHOVREBOFF, *California State University, San Francisco.*

Dr. Zhovreboff also reported on the apparent absence of extra-cellular protozoan or helminth symbionts in the alimentary canal of the scorpion *Uroctonus mordax* (Vaejovidae), based on a detailed examination of 13 males and 7 females collected from Marin County, California.

The main speaker of the evening was Dr. C. B. Philip, California Academy of Sciences, who presented the following talk as the presidential address for 1974:

Horse-flies, too, Take Some Victims in Cold-blood, as on Galapagos Isles.—It is not new that tabanid flies have been occasionally reported as attacking reptiles in various parts of the world, mostly subtropical. Such attacks, by host-seeking female flies to obtain ovigenous blood, relate to the availability of usually warm-blooded hosts, but recent evidence suggests occasional development of even preferential feeding on cold-blooded ones as well.

My interest in cold-blooded entomophagy was enhanced on coming to the California Academy of Sciences (CAS) in 1970, by finding a label, "biting turtle," cited later, on a pinned Galapagos horse fly. My speculative curiosity was aroused on how frequently horse flies might be attacking other reptiles on the Archipelago.